ST. XAVIER'S COLLEGE (Autonomous), PALAYAMKOTTAI – 627 002.

(Recognized as "College with Potential for Excellence" by UGC & Accredited at A^{++} Grade with a CGPA of 3.66 out of 4 in IV Cycle by NAAC)

Annual Report 2024 - 2025

MATERIALS RESEARCH CENTRE (2015)

The Materials Research Centre (MRC), Department of Physics, is actively engaged in research across various domains of materials science ranging from the development of novel nanomaterials for energy applications to the characterization of advanced nanomaterials. Notable achievements include the synthesis of graphene-based composites with exceptional mechanical properties and the discovery of new catalysts for sustainable chemical processes. Three of our research scholars—Mr. P. Ajith, Mr. M. Sappani Muthu, and Sr. Agnes CIC—have successfully completed their public *viva voce* examinations and received their doctoral degrees. Currently, Mr. A. Caroll Xavier, Ms. T. Xavier Jerlin Akshaya, and Ms. M. Maria Jenifer are conducting research under the guidance of Dr. D. Prem Anand. Dr. P. Ramasamy, Research Director of SSN College of Engineering, Chennai, visited our research centre and engaged in a fruitful discussion on the irradiation of solids and the SR Method. 3 project proposals have been submitted to various funding agencies, including DST, CSIR and TNSCST. During this academic year, the MRC has published seven research articles in leading national and international journals. The centre has been consistently engaged in cutting-edge research, from developing novel nanomaterials for energy applications to characterizing advanced materials for aerospace engineering. Its contributions include the synthesis of graphene-based composites with superior mechanical properties and the discovery of new catalysts for sustainable chemical processes. The MRC has published numerous papers in high-impact journals, significantly contributing to the global body of knowledge in materials science.

Looking ahead, the MRC is poised for continued growth and success. Future plans include expanding research initiatives in emerging fields such as quantum materials, biomaterials, and additive manufacturing. The centre also aims to strengthen existing collaborations and forge new partnerships to address complex material challenges and drive innovation across diverse sectors. The Materials Research Centre has had a highly productive and impactful year, advancing knowledge, fostering collaboration, and driving innovation in materials science and engineering. With a strong foundation and a clear vision for the future, the centre is well-positioned to make even greater contributions to the field in the years to come.